

What I claim as my invention is:

1           1. A circuit for balancing cell voltages in a multiple-cell battery, comprising:  
2           means for comparing voltage at a junction of a first cell and a second cell with a  
3           reference voltage and generating a comparison signal in response to a difference  
4           between said junction voltage and said reference voltage; and  
5           a first current generator connected across said first cell and a second current  
6           generator connected across said second cell, said current generators being normally in  
7           an off state, wherein only one of said first and second current generators is turned on at a  
8           time in response to said comparison signal.

1           2. A circuit in accordance with claim 1 wherein said reference voltage is provided  
2           by a voltage divider connected across said first and second cells.

1           3. A circuit in accordance with claim 1 wherein said comparison means comprises  
2           a differential amplifier.

1           4. A circuit in accordance with claim 1 wherein said first and second current  
2           generators each comprise a transistor and a resistor in series with a collector thereof, said  
3           transistor being responsive to said comparison signal applied to a base thereof to function  
4           as a switch.

1           5. A circuit in accordance with claim 4 wherein said transistors are opposite  
2           polarity so as to allow only one transistor to conduct, depending on the polarity of said  
3           comparison signal.

1           6. A circuit for balancing cell voltages in a multiple-cell battery, comprising:  
2           a voltage divider coupled across a series-connection of a first cell and a second  
3           cell;

4 a differential amplifier having a first input coupled to a midpoint of said voltage  
5 divider, and a second input coupled to a junction of said first and second cells, said  
6 differential amplifier generating a comparison signal upon detection of an unbalanced  
7 condition of said first and second cells; and

8 first and second current generators coupled respectively across said first and  
9 second cells, said first and second current generators each having a control element  
10 coupled to the output of said differential amplifier,

11 wherein one of said first and second current generators is turned on responsive to  
12 said comparison signal.

1 7. A circuit in accordance with claim 6 wherein said first and second current  
2 generators include first and second transistors.

1 8. A circuit in accordance with claim 7 wherein said first and second transistors  
2 each have a base, a collector, and an emitter, wherein the bases of said first and second  
3 transistors are coupled together to an output of said differential amplifier, said collectors  
4 are connected to respective current-setting resistors, and said emitters of said first and  
5 second transistors are coupled together to said junction of said first and second cells.

1 9. A circuit in accordance with claim claim 7 wherein said first and second  
2 transistors are opposite polarity.

1 10. A circuit in accordance with claim 6 wherein said differential amplifier may be  
2 enabled only during a battery charge cycle.